

UDC 621.762.2

USSR

KUKOZ, E. I., VOLOSUYK, YU. M., CHERNOV, G. K., and VLASOV, V. G.

"On the Question of Electrolysis of Ultrafine Ferromagnetic Powders"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 70-73 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G332)

Translation: A study is made of the possibility of obtaining powder with maximum drawn out single-dome-shaped particles (ESD particles) under transient modes of electrolysis in a two-layer electrolyzer on a rotating cylindrical cathode. The study is carried out on a unit with pulsed electrolysis regime. It is assumed that such a regime ensures conditions of growth of filament particles. Preliminary data indicates a change in the structure of particles and an almost complete disappearance of dentriteness. Further investigation of the process of electrolysis of powders, particularly at very short pulses, is necessary. 3 ill., 8 bibl. entries.

V. Chelnokov

1/1

- 28 -

USSR

UDC 541.135.52

KUKOZ, F. I., KUDRYAVTSEV, YU. D., MAKOGON, YU. O., and PRESENKO, L. N.,
Novocherkassk Polytechnic Institute

"Behavior of Nickel During a-c Electrolysis in Alkali Solutions. 1. Effect
of the Alkali Nature and the Current Density"

Moscow, Elektrokimiya, Vol 7, No 7, Jul 71, pp 990-994

Abstract: The intense destruction under certain conditions, of nickel electrodes in alkaline solutions by a-c electrolysis was experimentally investigated on electrodes in the form of rectangular plates of a total area of approximately 1 cm² of smooth nickel, type NP-2. Symmetrical and asymmetrical alternating currents with different amplitude values and similar duration of half-periods of anode and cathode currents were obtained. Destruction of Ni took place only when $i_c \cdot i_a \geq 1$ and $i_a \neq 0$, where i_c and i_a are the amplitudes of currents in the cathodic and anodic half-periods, respectively. Tabulated and experimental data show that the destruction rate increases in the series LiOH, NaOH, and KOH and passes the maximum at $i_a = 0.25$ a/cm² for constant value of $i_c = 1$ a/cm² and that on the boundary metal-
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- 67 -

USSR

KUKOZ, F. I., et al., *Elektrokhimiya*, Vol 7, No 7, Jul 71, pp 990-994

-solution there exists a linear impedance by current densities up to 1 a/cm^2 . It was found that the destruction of Ni is mainly dependent on processes on the surface of the electrode during the cathodic half-period of polarization and that the effect of cations of the alkaline metal in the destruction process of Ni is apparently combined with the swelling of reducible Ni hydroxides. Two illustrations, one table, six bibliographic references.

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MAGNETOMETRIC STUDIES OF THE IRON ELECTRODE OF AN ALKALINE BATTERY.
II. MAGNETOMETRIC DETERMINATION OF CURRENT EFFICIENCY DURING THE CHARGING
AUTHOR--KUKOZ, F.I., MAKAROV, V.I., SOROKINA, S.F.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(2), 195-8
DATE PUBLISHED-----70
SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE)
TOPIC TAGS--BATTERY ELECTRODE, IRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1988/0254 STEP NO--08/0364/70/008/002/0125/0128
CIRC ACCESSION NO--AP0105328
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

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CIRC ACCESSION NO--AP0105328

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAMINAR FE ELECTRODES (CONTG. TOTAL FE EQUALS 83.7 AND METALLIC FE EQUALS 46.9PERCENT AND CONTG. THE STD. ADDITIVES OF S AND NI) WERE CYCLED AT 100 MA DISCHARGE TO 0.75 V RELATIVE TO THE HGO REFERENCE ELECTRODE AND 125 MA CHARGE FOR PERIODS SMALLER THAN OR EQUAL TO 8 HR. THE MAGNETIC SUSCEPTIBILITY (X) WAS FOLLOWED. RESULTS FOR THE 25TH AND 26TH RECHARGE CYCLE SHOWED THAT THE VALUE OF X BECAME CONST. WHEN THE CURRENT EFFICIENCY BEGAN TO DECREASE SIGNIFICANTLY FROM THE PRIMARY CHARGING REACTION. THUS, THE END OF THE RECHARGE PERIOD COULD BE DETD. BY DETG. X.

UNCLASSIFIED

UDC 621.357.1.035.224

USSR

VOLOSUK, YU. M., CHERNOV, G. K., ~~YUKOZ, L. A.~~, VASENIN, V. N.

"Granulated and Powdered Anodes"

Tr. Novocherkas. politekhn. in-ta (Works of Novocherkassk Polytechnic Institute), 1971, 239, pp 93-99 (from RZh-khimiya, No 12, Jun 72, Abstract No 12L342)

Translation: A study was made of the possibility of using ground metal as soluble anodes in electrolytic production or metal refining. The anode chamber of the electrolytic cell made from an insoluble material (vinyl plastic, plexiglass) was filled with granules of the processed metal. During operation, the chamber was filled with granules from a bin located above it. It was demonstrated that better movement of the granules as the solution process takes place is observed when their linear dimensions are less than half the chamber thickness. An increase in the anode surface as a result of using granules leads to a reduction in the overvoltage of solution of the anode metals and improves the conditions of purification of the electrolyte when refining the metals. $\text{BT}_a \sim 100\%$.

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- 8 -

UDC 621.762.001:669.3

USSR

KUKOZ, L. A., and BONDARENKO, A. V.

"Dispersed Composition of Copper Powder, Produced by Electrocrystallization With the Use of Acoustic Vibrations"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 203, pp 82-88 (From RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G295)

Translation: A study is made of the composition of electrolytic Cu powder. The process of electrocrystallization is intensified by low-frequency vibrations, which are transferred to the system through a vibrating cathode of toothed profile. The powders produced are subjected to sedimentation analysis on a torsion scale. Within the studied interval of the composition of electrolyte in regard to Cu content (1-4 g/l) the most probable radius of particles, produced by the application of low-frequency vibrations, is 2-4 μ . The most probable radius of the particles of control powder equals 1-2 μ . The specific surface and the coefficient of heterogeneity of the acoustically treated powder are considerably lower than those of the control powder. 3 ill., 3 tables, 5 bibl. entries.

V. Chelnokov

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USSR

UDC 621.762.1:669.3

BONDARENKO, A. V., and KUKOZ, L. A.

"Production of Copper Powders by Electrocrystallization Using Acoustical Oscillations"

Ul'trazvuk. metody intensivifik. tekhnol. protsessov [Ultrasonic Methods of Intensifying Technological Processes -- collection of works] (Moscow Institute of Steels and Alloys, 60), Moscow, 1970, pp. 204-207 (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G435 by the authors)

Translation: The possibility is studied of producing Cu powders from sulphate electrolytes with various Cu contents using a grooved cathode oscillating at 100 Hz. 1 figure.

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- 35 -

AA 0044266

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243040 CONTACTLESS SYNCHRONOUS GENERATOR WITH COMBINED EXCITATION achieves higher specific power capability. Its components are: permanent magnet (1) with pole-piece (4); inductor system comprising exciter winding (7), cylindrical poles (2,3), star-shaped rotor poles (5,6); stator (8), non-magnetic shaft (9), six-sided bushing (10), hubs (11,12) for inductor rotor. The magnetic system is arranged so that cylindrical poles (2) join pole-pieces (4) of one polarity and poles (3) of the other system join pole-pieces of other polarity. In order to reduce the permeance between the six-sided bushing (10) and inductor rotor hubs (11,12), the hubs are axially removed and the star-shaped poles are slanted.

18.7.67 as 1173847/24-7. V.G.ANDREEV et al. (25.9.69)
Bul 16/5.5.69. Class 21d². Int.Cl. H 02k.

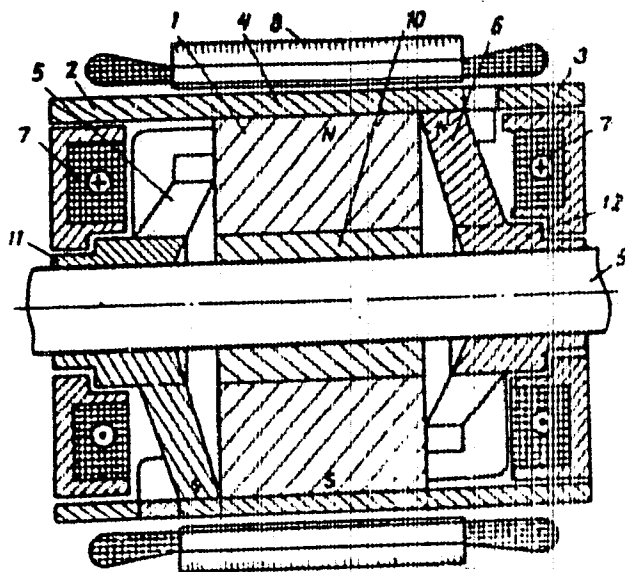
AUTHORS: Andreev, V. G., Golgofskiy, F. I., Kuks, V. Ya.,
Livshits, E. Ya., Starostin, A. P.

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UDC: 51

USSR

KUKSA, A. I.

"On a Method of Solving a Maximin Problem of Discrete Programming"

Kiev, Teoriya optimal'n. resheniy---sbornik (Theory of Optimum Solutions
--collection of works), 1972, pp 88-91 (from RZh-Kibernetika, No 5, May
73, abstract No 5V658 by Yu. Finkel'shteyn)

Translation: The author considers a multidimensional nonlinear problem
of a knapsack with a target function of special form

$$\{\min_{j=1, \dots, N} f_j(x_j)\} \rightarrow \max, \quad (1)$$

$$\sum_{j=1}^N a_{ij}(x_j) \leq 1, \quad i=1, 2, \dots, m, \quad (2)$$

$$x_j \in (0, 1), \quad j=1, 2, \dots, N. \quad (3)$$

Here $f_j(x_j)$, $g_{ij}(x_j)$ are increasing positive functions. It is assumed that
the variables $x_1, \dots, x_N$ are arranged in order of increasing values of $f_j(x_j)$.
The following simple algorithm which enables obtaining an exact optimum

is proposed for solving problem (1)-(3). Let $\max_{j=1, \dots, N} \sum_{i=1}^m g_{ij}(1) \leq 1$, $\max_{j=1, \dots, N} \sum_{i=1}^{m-1} g_{ij}(1) \leq 1$,
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USSR

KUKSA, A. I., Teoriya optimal'n. resheniy, 1972, pp 88-91

Then the vector $x(n)$ (where $x_i(n)=1$ when $i \in n$ and $x_i(n)=0$ when $i \notin n$) is an optimum plan of problem (1)-(3). The presentation and justification of the algorithm are cumbersome. There are isolated inaccuracies.

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- 77 -

USSR

UDC 539.4.015/019

KUKSA, L. V., Volgograd Polytechnic Institute

"Development Principles of Micro-Heterogeneous Deformation of Semicrystalline Alloys"

Kiyev, Problemy Prochnosti, No. 9, Sep 71, pp 23--25

Abstract : Comparative investigations of the micro-heterogeneity of deformations of aluminum monocrystal and polycrystalline aluminum obtained from the monocrystal were carried out with a view to clear up the nature of plastic deformation principles of semicrystalline alloys. The deformations were measured on different test bases, the least base measured 10 μ m. The investigation results demonstrate an essential difference in the development character of micro-heterogeneous deformations of the monocrystal and the polycrystalline aluminum. The high gripping uniformity of the deformation hearth was found to be characteristic for polycrystalline aluminum only and to depend on the result of complex mutual interaction of individual grains, the effect of grain boundaries, and the impossibility of deformation of individual micro-volumes out of the bond with other micro-volumes. Two illustr., two formulas, five biblio. refs. 1/1

- 116 -

USSR

UDC 533.95:538.4

KUKSA, Yu. G., SMIRNOV, A. S., KHMARA, I. S., and CHERNYI, Z. D.

"Action of Electrodynamic Three-Dimensional Forces Under Pulse Excitation

V sb. 7-ye Sovesh. po magnit. gidrodinamike. T. 3 (Seventh Conference on Magnetohydrodynamics. Vol 3 -- Collection of Works), Riga, "Zinatne," 1972, pp 61-64 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G16)

Translation: Several magnetoacoustic quantities are evaluated theoretically, particularly forces excited in the action of a pulsed field on liquid metal in a crucible placed in an inductor. The action of magnetic field pulses on zinc and aluminum in a ceramic crucible after the cooling curve enters the horizontal segment was analyzed in accordance with the theoretical data. The pulse duration of the action was 10 μ sec and the pulse repetition frequency varied in the range 0.16-2 Hz. It was found from an analysis of the data that pulse electrodynamic action is assisted by reduction of the grain; however, the degree of reduction depended on the frequency, and the optimum was within the limits 0.16-1 Hz. A uniform distribution of porosity over the entire volume of the metal was observed in all modes. Also tested were resonance conditions for pulsed action on the crystallization of steel castings. In this case resonance and reduction in grain size was observed at a pulse repetition frequency of 25 Hz. V. I.

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1/2 029 UNCLASSIFIED PROCESSING DATE--02NOV70
TITLE--RELATION BETWEEN BREAKDOWN AND DEFORMATION IN ORIENTED POLYMERS -J-

AUTHOR--(02)--KUKSENKO, V.S., SLUTSKER, A.I.

COUNTRY OF INFO--USSR *K*

SOURCE--MEKH. POLIM. 1970, 6(1) 43-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELONGATION, NYLON, POLYPROPYLENE, POLYMER DEGRADATION, X RAY
DIFFRACTION STUDY, TENSILE STRENGTH, POLYMER PHYSICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/0326

STEP NO--UR/0374/70/006/001/0043/0047

CIRC ACCESSION NO--AP0111522

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0111522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELONGATION OF THE ORIENTED POLYMERS (NYLON 6, POLYPROPYLENE, ETC.) CAUSES THE APPEARANCE OF MICROFISSURES WHICH WERE DETECTED BY LOW ANGLE X RAY DIFFRACTOMETRY. THE RELEASE OF TENSION CLOSES THE FISSURES BUT DOES NOT SEAL THEM AS SHOWN BOTH BY X RAY DIFFRACTOGRAMS AND BY THE DIFFERENCES BETWEEN THE STRESS STRAIN CURVES OBTAINED AFTER THE 1ST AND AFTER THE SUBSEQUENT ELONGATIONS. THE FAILURE OF THESE POLYMERS DEPENDS ON ORIENTATION AND THE NO. OF FISSURES PER UNIT VOL. ABOUT 10 KG-MM PRIME² OF THE TENSILE STRENGTH IS RELATED TO THE RELATIVE MOTION (PSEUDODIFFUSION FLOW) OF POLYMER CHAINS IN THE ABSENCE OF MICROFISSURES.

UNCLASSIFIED

USSR

GEZALOV, M. A.; KUKSENKO, V. S.; SLITSKER, A. I. (Joffe Physics-Engineering Institute, USSR Academy of Sciences, Leningrad)

"Formation of Submicroscopic Cracks in Stressed Polymers at Various Temperatures"

Leningrad, Fizika Tverdogo Tela; February, 1971; pp 445-9

ABSTRACT: A method of small-angle X-ray diffraction was used to study the laws governing the formation of submicrocracks under stress along the orientation axis of crystalline polymers (polyacrylonitrile, polypropylene) at various temperatures (from +20° to -70°C). The equipment used allowed direct stress of the samples in the vacuum chamber of a small-angle diffractometer in the temperature range of +100° to -150°C. The appearance of small-angle diffusion scattering served as an indicator of the occurrence of submicrocracks. The dimensions and concentration of the submicrocracks were determined by the angle of intensive diffusion scattering in different directions and the absolute magnitude of the intensity respectively.

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USSR

GEZALOV, M. A., et al, Fizika Tverdogo Tela; February, 1971; pp 45-9

The fibrillar type of supermolecular structure is characteristic of the oriented state. It appeared that the transverse dimensions of the submicrocracks (perpendicular to the axis of stress) do not vary with a change in the stress temperature and are the same in magnitude as the transverse dimension of the fibril. Thus, the process of destruction of the polymer appears to be closely connected with its supermolecular structure. The longitudinal dimensions of the submicrocracks decrease with a decrease in the stress temperature, which is connected with a decrease in the deformability of the polymer. The concentration of submicrocracks in the prestressed state decreases monotonically with a decrease in the temperature of the samples during the test. On the basis of this, the conclusion is drawn that the observation of submicrocracks in many cases is not limited by the absence of submicrocrack formation itself but is related to the fact that the concentrations and dimensions of the submicrocracks are comparatively small and can not be recorded by present techniques of X-ray measurement.

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CSO: 1862-W

- 68 -

USSR

UDC: None

GEZALOV, M. A., KUKSENKO, V. S., and SLUTSKER, A. I.

"Kinetics of the Formation of Submicroscopic Cracks in Polymers Under Load"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 413-416

Abstract: A description is given of experiments performed by the authors to determine how the formation of submicroscopic cracks in polymers under various stresses and temperatures varies. In these experiments, the specimen was kept at constant temperature and was placed in a small-angled x-ray diffractometer. It was subjected to a load increasing uniformly with time, and the intensity of the diffraction dispersion was measured. To exclude factors complicating the kinetics of the crack formation, the measurements were made at the initial portions of the curves for the accumulation of the cracks, at which the complications are minimal. Curves are given for the accumulation of cracks in capron as a function of the stress and the temperature. From these curves, the authors find a connection between the processes of crack formation and the destruction or life expectancy of the specimen. They express their gratitude to S. N. Shurkov for his comments and are associated with the A. F. Ioffe Physicotechnical Institute.

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1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ADHESION OF POLYURETHANES AT LOW RATES OF EXFOLIATION -U-
AUTHOR--(03)-LIPATOV, YU.S., KUKSIN, A.N., SERGEYEVA, L.M.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6), 688-91
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--ADHESION, POLYURETHANE RESIN, COPOLYMER, FURAN, ETHYLENE
OXIDE, STEEL, BRASS, GLASS, PLASTIC COATING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0768 STEP NO--UR/0369/70/005/006/0688/0691
CIRC ACCESSION NO--AP0124438
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WORK OF ADHESION OF POLYURETHANE COATINGS WAS MEASURED. A COPOLYMER OF TETRAHYDROFURAN WITH 25PERCENT ETHYLENE OXIDE AND AN ADDUCT OF POLYURETHANE DIISOCYANATE WITH TRIMETHYLPROPANE OF DIFFERENT NCO-OH RATIOS WERE USED FOR THE PREPN. OF THE POLYURETHANES. SINCE DELAMINATION OF THE FILM UNDER TENSION CONTINUED UNTIL THE ADHESION FORCES EQUALLED THE TENSION IN THE DELAMINATED FILM, THE REMAINING ADHESIVE FORCES CALCULATED PER UNIT WIDTH (1 CM) WERE IDENTIFIED AS THE "EQUILIBRIUM WORK OF ADHESION." THIS VALUES, BEING INDIPENDENT OF SECONDARY FACTORS, WAS USED IN STUDYING ADHESION. THE WORK OF ADHESION INCREASED WITH THE INCREASE IN THE CROSSLINK D. OF THE POLYMER AND DECREASED DEPENDING ON THE BASE IN THE ORDER: STEEL GREATER THAN BRASS GREATER THAN DURALUMIN GREATER THAN GLASS. FACILITY: INST. KHIM. VYSOKOMOL. SOEDEN, KIEV, USSR.

UNCLASSIFIED

USSR

RUSYAYEV, V. F., and KUKSINSKIY, V. Ye., Chita Medical Institute

"A Study of the Effect of an Electromagnetic Field on the Coagulative and Fibrinolytic Properties of Blood"

Moscow, Biofizika, Vol 18, Vyp 1, 1973, pp 160-163

Abstract: Test tubes of blood from dogs were subjected to low-frequency (50-2,000 hertz) electromagnetic fields to study the nonthermal effects of such fields on blood properties. In whole blood the field suppressed thromboplastic activity and heightened anticoagulative activity. While fibrinolysis increased at 50, 1,000, and 2,000 hertz and decreased at other frequencies. In blood devoid of thrombocytes, the field suppressed thromboplastic and fibrinase activity, increased fibrinolysis at 1,000 and 2,000 hertz, and inhibited it at other frequencies. Heparin tolerance and heightened anticoagulative properties were also observed. In the final experiment the relationship between fibrinolysis and frequency was studied. In blood devoid of thrombocytes fibrinolysis was activated only in a very narrow frequency range (1,000-2,000 hertz). Thus electromagnetic fields do have specific, nonthermal effects on blood properties at low frequencies. It is suggested that the field induces

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- 64 -

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EMERGENCE OF CHANNELS IN THE SPACE BEHIND THE SHAFT OF WELLS AFTER
CEMENTING -U-
AUTHOR-(03)-BULATOV, A.I., OBOZIN, D.N., KUKSOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--GAZOV, PROM. 1970, 15(2), 3-6

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--SEAL, WELL DRILLING MACHINERY, CEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/2040

STEP NO--UR/0492/70/015/002/0003/0005

CIRC ACCESSION NO--AP0122269

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122269

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEDIMENTARY INSTABILITY OF THE SEALING SOLN., WHICH CAN CAUSE CHANNELING, ESP. WHEN THE WELL LINING BECOMES TWISTED, IS OVERCOME BY USE OF A SOLN. WITH LOW WATER LOSS. LAB. APP. FOR MEASURING SEDIMENTATION AND CHANNELING IS DESCRIBED.

FACILITY: KRSNODARSK, FILIAL VNLINFT, KRSNODARSK, USSR.

UNCLASSIFIED

USSR

UDC 575.576.858

MARKARYAN, D. S., SHEVTSOVA, Z. V., KUKSOVA, M. I., MACHAVARIANI, M. G., AVDZHIAN, M. V., Institute of Experimental Pathology and Therapy, Academy of Medical Sciences USSR, Sukhumi

"The Mutagenic Effect of Viruses. II. Cytogenetic Study of Monkey Hemorrhagic Fever"

Moscow, Genetika, Vol 6, No 1, 1970, pp 144-150

Abstract: The cytogenetic effects of monkey hemorrhagic fever virus were studied on experimentally infected *Macaca rhesus* monkeys. A decrease in mitotic activity and an increase in the number of dead and pathologically altered cells in the bone marrow of infected animals was observed. The number of chromosome aberrations in bone marrow cells and in peripheral blood leukocytes in culture increased. The aberration yield produced by concentrated virus-containing material was higher than that produced by the initial material. The virus of monkey hemorrhagic fever induced primarily aberrations of the chromatid type, which were similar to those that occurred in control animals as a result of spontaneous mutation.

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE MUTAGENIC EFFECT OF VIRUSES. REPORT II. CYTOGENETIC STUDY OF
MONKEY HEMORRHAGIC FEVER -U-
AUTHOR--(05)--MARKARYAN, D.S., SHEVTSOVA, Z.V., KUKSOVA, M.I., MACHAVARIANI,
M.G., ABDZHIAN, M.V.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA, 1970, NR 1, PP 144-150
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGIC FEVER, VIRUS, MUTAGEN, MONKEY, BONE MARROW,
MITOSIS, CHROMOSOME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1371

STEP NO--UR/0473/70/000/001/0144/0150

CIRC ACCESSION NO--AP0136729

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136729

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CYTOGENETIC STUDY OF MONKEY HEMORRHAGIC FEVER SHOWED A DECREASE IN MITOTIC ACTIVITY AND AN INCREASE IN THE NUMBER OF DYING CELLS AND CELLS WITH PATHOLOGICAL CHANGES IN INFECTED MONKEY BONE MARROW. EXPERIMENTAL MONKEY HEMORRHAGIC FEVER WAS ACCOMPANIED BY AN INCREASE IN THE LEVEL OF CHROMOSOME ABERRATIONS IN BONE MARROW CELLS AND IN CULTURES OF PERIPHERAL BLOOD LEUKOCYTES. INJECTION OF CONCENTRATED VIRUS CONTAINING MATERIAL PRODUCED A HIGHER YIELD OF CHROMOSOME ABERRATIONS THAN INJECTION OF NATIVE MATERIAL. HEMORRHAGIC FEVER VIRUS INDUCED CHROMOSOME REARRANGEMENTS OF THE CHROMATIC TYPE, ANALOGOUS TO THOSE OBSERVED IN CONTROL CELLS DURING SPONTANEOUS MUTATION. THE OBSERVED INCREASE IN THE LEVEL OF CHROMOSOME ABERRATIONS IN MONKEY BONE MARROW CELLS DUE TO THE VIRUS INDICATES THE REAL VALUE OF THIS VIRUS IN INTENSIFYING THE MUTATION PROCESS IN SOMATIC TISSUES OF SENSITIVE TYPES. TWENTY MACACA RHESUS MONKEYS WERE INFECTED WITH HEMORRHAGIC FEVER VIRUS PASSAGED 21-24 TIMES IN MONKEYS. MONKEYS WERE INFECTED WITH BRAIN MATERIAL FROM SICK MONKEYS IN 1 ML AMOUNTS IN A TITER OF 10 PRIME3 ML (10 LETHAL DOSES) OR WITH MATERIAL CONSISTING OF 100 LETHAL DOSES. THE INCUBATION PERIOD OF THE DISEASE VARIED FROM 2-6 DAYS. FACILITY: INSTITUT EKSPERIMENTAL'NOY PATOLOGII I TERAPII, AMN SSSR, SUKHUMI.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC: 591.1.15

KHUKHLYANSKAYA, M. E., KHRIPCHENKO, I. P.

"Activity of Hexokinase and Cholinesterase in the Brain and Heart of Rats Under the Effect of Relatively Low Doses of Systemic Fractional X-Irradiation"

Vestn. Belorus. un-ta (Belorussian University Herald), 1972, Ser. 2, No 1, pp 45-46 (from RZh-Biologicheskaya Khimiya, No 12, Jun 72, Abstract No 12F1423)

Translation: The activity of hexokinase and cholinesterase in homogenates of the brain and heart of intact and adrenalectomized rats was determined on the first, third and seventh day after systemic fractional x-ray exposure to a total dose of 40 roentgens. On the seventh day after irradiation, the activity of hexokinase and cholinesterase in the brain decreased, while the corresponding activity for the heart increased. Irradiation of the adrenalectomized rats caused a slight increase in the activity of these enzymes in the brain and heart muscle.

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USSR

UDC 616-074:681.3

KOBLOV, L. F., KUKURUZA, E. N., and MARKOVA, A. M., Laboratory for Clinical Diagnosis, and Scientific Organization Division, Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Automation of Biochemical Tests and Computer Processing of the Results"

Moscow, Laboratornoye Delo, No 9, 1970, pp 525-529

Abstract: Since 1969 the authors have been studying data obtained by means of a Clinomak, an automated apparatus manufactured in Italy by Polinak. The device comprises a unit for measuring and storing blood, a photocolormeter, and a programming device. The results have been processed on a Soviet Nairi computer. The Clinomak is capable of determining cholesterol, glucose, blood bilirubin, protein fractions, and thymol turbidity. In 86 patients with diseases of the liver and bile duct, seven types of glycemic curves were distinguished (normal, original hypoglycemic, hepatic, pancreatic, asthenic, diabetic, and adrenal insufficiency). Establishing the type of glycemic curve for each patient permitted rapid and accurate diagnosis of the disease. Currently under study are 267 patients with surgical diseases of the heart and blood vessels. The hemograms, thromboelastograms, and coagulograms are processed in the same manner as

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- 30 -

USSR

KOBLOV, L. F., et al., Laboratornoye Delo, No 9, 1970, pp 525-529

the glycemic curves. Efforts are being made to identify five types of hemograms (normal, anemic, inflammatory, allergic, and degenerative) and five types of coagulograms and thromboelastograms (normal, hypocoagulating, hypercoagulating, prethrombotic, and acute fibrinolysis).

2/2

USSR

UDC 669.184.266:14.018.2

KACHUR, B.K., KUKURUZNYAK, I.S., NIKIFOROV, B.V., TARAFUNOV, H.P., URBIV, V.D.
POGORELYY, V.P., GALATON, YE.G., KHARCHENKO, B.V., and PLOCHINE, V.A.
(Ukrainian Scientific Research Institute of Metals, Krivoy Rog Metallurgical
Plant)

"Smelting of Low-Alloy Steel in a 130-ton Converter"

Moscow, Metallurg, No 9, Sep 71, pp 14-16

Abstract: A description is given of the technology of smelting low-alloy steels (OST-1, OST-2, 25G2C, and 35GC) in 130-ton oxygen converters at the Krivoy Rog Metallurgical Plant. Pig iron (881 kg per ton of steel) containing 0.6-0.9% Mn, 0.4-0.8% Si, not more than 0.06% S, and not more than 0.1% P, is poured into the converter at 1250-1350°C. Fresh burnt lime (65 kg), limestone (15-20 kg), and fluorspar (2-5 kg) per ton of steel were used as slag forming materials. The use of liquid alloying elements (75% FeMn, 65% FeSi and SiMn) in the ladle makes it possible to reduce the expenditure of ferroalloys, to improve the macro- and microstructure of the metal, and to minimize the content of nonmetallic inclusions. The steel obtained satisfies the requirements of GOST 5058-65.

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1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DYNAMICS OF GAS EVOLUTION AND OF GAS CONTAMINATION WITH DUST IN 100
TON OXYGEN CONVERTERS -U-
AUTHOR-(05)-KRICHEYTsov, E.A., SHIRINKIN, N.A., REKHTER, V.YA.,
KUKURUZNYAK, I.S., KITAYEV, A.T.
COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 113-18

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL OXYGEN CONVERSION, EXHAUST GAS DYNAMICS, STEEL
MANUFACTURE PROCESS, METALLURGIC FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAmE--1995/0203

STEP NO--UR/0133/70/D30/002/0113/0118

CIRC ACCESSION NO--AP0115907

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF 100 TON CONVERTER

HEATS SHOWED A MARKED NONUNIFORMITY OF GAS AND DUST EVOLUTION RATES.

THE REASONS FOR THIS ARE DISCUSSED. THE RATE OF OPERATIONS IS DEFINED

BY THE CAPACITY OF THE GAS REMOVING INSTALLATION, WHICH MUST BE DESIGNED

FOR THE MAX. GAS EVOLUTION.

FACILITY: KRIVOROZH. MET. ZAVOD,

KRIVOI ROG, USSR.

UNCLASSIFIED

USSR

UDC 666.763.46.001.4

BRON, V. A., KUKURUZOV, A. P., DIYESPEROVA, M. I., and STEPANOVA, I. A., Eastern Institute of Refractories

"Magnesite-Chromite Products of High Purity Magnesite and Chromite"

Ogneupory, No. 2, 1971, pp 32-37

Abstract: The manufacturing technology, properties, and microstructural peculiarities are studied for products manufactured of magnesite and chromite with low contents of impurity oxides. The products have high refractory properties: the temperature at which deformation begins under load is 1700°C and higher, the bending strength at 1300°C is 2.5-3 times higher, and the deformation rate during creep tests 3 times lower than ordinary periclase-spinellide products. The products have good heat resistance, particularly if a small quantity of granular chromite is introduced to the charge. A direct bond is formed between the crystals of periclase -- periclase -- spinellide in the products. The presence of two forms of direct bonding is established.

1/1

USSR

UDC 621.317.784.029.64:621.398

ZHELDUBAYEV, V. N. and KUKUSH, V. D.

"Permissible Time Lag of a Telemetry Channel for Measuring the Transmitting Power of Super-High Frequency, Operating Under Variable Load Conditions"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radiotekhnika. Republic Interagency Thematic Scientific-Technical Collection of Articles), 1972, vyp. 21, pp 194-201 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A224)

Translation: A theoretical study is presented on the measurement of transmitting power in output tracts operating under variable load conditions with respect to time. Load characteristics are given for operation under continuous and pulse emission conditions. Formulas are derived for estimating the lag time of a telemetry channel used in measuring transmitting power. Original article: five illustrations. Resume.

1/1

- 65 -

USSR

UDC: 621.317.784

ZHENDUBAYEV, V. N., KUKUSH, V. D., ZOZULYA, I. I.

"A Transmitted Power Meter With Mixed Inductance-Capacitance Coupling"

Radiotekhnika. Resp. mezhved. temat. nauch. tekhn. sb. (Radio Engineering. Republic Thematic Interdepartmental Scientific and Technical Collection), 1971, vyp. 17, pp 47-55 (from RZh-
-Radiotekhnika, No 3, Mar 72, Abstract No 3A336)

Translation: The paper describes an instrument for measuring power transmission in waveguide channels with arbitrary load (according to VSWR). The operating principle of the instrument is based on multiplication of microwave signals proportional to the transverse component of the electromagnetic field. The operating principle of the instrument is described and the results of studies are presented. It is concluded that the meter is feasible for use as a monitoring and measurement device in waveguide channels of radio devices. Five illustrations, bibliography of eight titles.

1/1

USSR

UDC 621.317.382.023

SEREDNIY, V. P., ZHILKOV, V. S., KUKUSH, V. D.

"Model Ponderomotive Device for Reproduction of a Unit of Superhigh Frequency Power in the 8 Millimeter Wave Band"

Radiotekhnika. Resp. Mezhved. temat. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Thematic Scientific and Technical Collection), No 19, 1971, pp 136-140 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1A412)

Translation: A model ponderomotive device for measuring power in the 8-mm radio wave band is described, the basic technical characteristics of which are the following: measurable power limit 0.1-1 watt, operating frequency 39.45 gigahertz, measurement error with well-matched load $\pm 1.2\%$. A study was made of the characteristic features of absolute calibration of ponderomotive wattmeters for the millimeter band, and the possibility of increasing the sensitivity of the instruments without worsening their input characteristics was demonstrated. It was concluded that the creation of a model device comparable with respect to accuracy to the calorimetric high-discharge wattmeters is possible. There are 2 illustrations and a 5-entry bibliography.

1/1

USSR

UDC: 621.317.335.3

PASECHNIK, V. F., KUKUSH, V. D.

"Measuring the Complex Dielectric Constant by Using Parameters of the Polarization Ellipse of a Reflected Signal"

Radiotekhnika. Resp. mezhved. nauchn.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 183-190 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A238)

Translation: Theoretical relationships and computational formulas are presented for finding the complex dielectric constant. An installation for making the measurements is described as well as the measurement procedure. It is shown that the maximum relative error of the method is no more than 3.4 percent. Nomograms are given for facilitating computation of the dielectric constant from the measured quantities. Four illustrations, bibliography of eleven titles. Résumé.

1/1

USSR

UDC 621.372.85

ZHIDKOV, V. S., KUKUSH, V. D., PRONENKO, V. I., SAMOYLOVICH, A. I.

"Precision Liquid Short-Circuiting Plungers"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 110-113 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B175)

Translation: Results are presented from a study of mercury short-circuiting plungers in the centimeter and decimeter wave bands. There are 3 illustrations and a 2-entry bibliography.

1/1

USSR

UDC: 621.317.374

PASECHNIK, V. F., KUKUSH, V. D.

"A Method of Measuring Complex Permittivity at Superhigh Frequencies in Free Space"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 29, 1970, Soviet Patent No 281569, Class 21, filed 23 Jun 69, p 61

Abstract: This Author's Certificate introduces a method of measuring complex permittivity on superhigh frequencies in free space. As a distinguishing feature of the patent, measurement precision is improved by exposing the dielectric specimen at an angle of incidence of 45° with a wave polarized at an angle of 45° to the plane of incidence, and determining the ellipticity and angle of inclination of the major axis of the ellipse of the reflective polarization.

1/1

USSR

USSR 621.317.335.3

PASECHNIK, V. F., KUKUSH, V. D.

"Measuring the ~~Complex~~ Dielectric Constant in the Millimeter Wave Band"

Radiotekhnika. Resp. mezhd. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 114-118 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A295)

Translation: A brief review of the accuracy of measuring the dielectric constant ϵ' by various methods is presented. Theoretical relations and the calculation formulas of the method permitting measurement of the complex values of the dielectric constant are presented. A description of the device and the measurement procedure are presented. There are 2 illustrations and a 10-entry bibliography.

1/1

- 80 -

USSR

UDC: 621.317.353(088.8)

PASECHNIK, V. F., KUKUSH, V. D.

"A Method of Measuring Complex Permittivity"

USSR Author's Certificate No 266875, filed 18 Nov 68, published 15 Jul 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A357 P)

Translation: This Author's Certificate introduces a method of measuring permittivity in the millimeter wavelength range. The procedure is based on the effect of reflection of an electromagnetic wave from the interface between two media. The authors point out the disadvantages of existing methods of permittivity measurement based on this same principle. In the proposed method, precision is improved by measuring the amplitudes of the orthogonal components of the reflected signal, and determining the real and imaginary components of permittivity from the ratio of these amplitudes and the phase difference. E. L.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--DIAMOND POTENTIAL OF THE EASTERN PART OF THE RUSSIAN PLATFORM -U-
AUTHOR--(03)-GRINSON, A.S., KUKUSHKIN, A.I., NIKHAYLOVSKAYA, L.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (1), 105-13
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--ROCK, DIAMOND, GEOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1278

STEP NO--08/0018/79/00007001/0105/0113

CITE ACCESSION NO--A20106159

REF ACCESSION

UNCLASSIFIED

PROCESSING DATE--0200170

2/2 011

CIRC ACCESSION NO--AP0105059

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIMARY DIAMOND BEARING KIMBERLITELIKE ROCKS IN VOLCANIC EVENTS OF EXPLOSION PIPE TYPES, DIKES, ETC. IN THE EASTERN PART OF THE RUSSIAN PLATFORM, WERE FORMED ONLY DURING THE PLATFORM STAGE OF THE STRUCTURE DEVELOPMENT BY STARTING FROM MIDDLE OR UPPER PROTEROZOIC (RIPHEAN) TIME WHEN THE RIGID CRYST. BASEMENT, CAPABLE OF FRACTURING, WAS ALREADY FORMED. THE DETECTION OF BURIED (HIDDEN) MAGMATIC BODIES OF BASIC AND ULTRABASIC COMPN. IS POSSIBLE BY GEOPHYS. METHODS. THE MAGNETIC ANOMALIES, LOCALIZED TO THE ZONES OF DEEP FRACTURES IN THE PLATFORM BASEMENT, ARE THE MOST PROMISING IN THIS PROSPECT. THE MINERALS, TYPICAL OF BASIC AND ULTRABASIC ROCKS, AND MINERALS, GENETICALLY RELATED TO THE DIAMONDS (PYROPE, CHROME SPINEL, ETC.), WERE FOUND DURING MINERALOGICAL STUDY OF HEAVY FRACTIONS FROM ROCKS OPENED BY DRILL HOLES AND SITUATED IN THE ZONES OF DEEP FRACTURES OF THE BASEMENT. SEVERAL MAGMATIC BODIES OF ALK. BASIC COMPN. WERE FOUND IN THE DIAMOND BEARING KOLVA VISHERA AREA ON THE WESTERN SLOPES OF THE URALS. THIS INDICATES THE POSSIBILITY OF FINDING THERE PRIMARY DIAMOND BEARING ROCKS.

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PYROGENALE IN THERAPY OF NON GONOCOCCAL URETHRITES AND THEIR
COMPLICATIONS -U-
AUTHOR--KUKUSHKIN, A.M. K
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 80-83
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PYROGEN, UROLOGY, REPRODUCTIVE SYSTEM, GLAND, PROTEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1492 STEP NO--UR/0206/70/000/008/0080/0083
CIRC ACCESSION NO--AP0101576
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101576

ABSTRACT/EXTRACT--(U) GP-C-

ABSTRACT. THE RESULTS OF TREATMENT OF 70 MEN SUFFERING FROM NON GONOCOCCAL INFLAMMATIONS OF THE UROGENITAL ORGANS WITH PYROGENALE IN COMBINATION WITH OTHER DRUGS ARE REPORTED. IN 67 PATIENTS CHRONIC URETHRITIS WAS ESTABLISHED ACCOMPANIED BY PROSTATITIS IN 57, BY PROSTATITIS, VESICULITIS AND CUPERITIS IN 2 AND BY EPIDIDYMITIS IN 6 PATIENTS. IN 3 PATIENTS CHRONIC PROSTATITIS DID NOT INVOLVE THE URETHRA. PYROGENALE WAS INOCULATED INTRAMUSCULARLY WITH 25-50 MPD AT 1-2-DAY INTERVAL. IN SUBSEQUENT INJECTIONS THE DOSE WAS INCREASED BY 25-50 MPD. THE COURSE OF TREATMENT CONSISTED OF 10-20 INJECTIONS. OUT OF 640 INJECTIONS OF PYROGENALE 462 (72.1PERCENT) WERE ACCOMPANIED BY A RISE OF TEMPERATURE TO 37.30DEGREES-37.80DEGREES. IN SOME RARE CASES THE FEVER EXCEEDED 38.0DEGREES C. IN ALL THE PATIENTS LEUKOCYTAL REACTION WAS OBSERVED. INJECTIONS OF PYROGENALE WERE WELL TOLERATED. AFTER THE COURSE OF TREATMENT 64 PATIENTS HAD NO MORE SIGNS OF URETHRITIS, THE PROSTATE WAS NORMALIZED IN 10 PATIENTS, IMPROVEMENT WAS ACHIEVED IN 38 PATIENTS, AND IN 14 PATIENTS NO CHANGES IN THE GLAND COULD BE DETECTED BY PALPATION. THE INFLAMMATORY INFILTRATE IN THE EPIDIDYMS IN 1 PATIENT RESOLVED COMPLETELY, AND IN 5 PATIENTS SMALL INDURATIONS (OF THE SIZE OF A PEA) REMAINED. USE OF PYROGENALE IN THE TREATMENT OF NONGONOCOCCAL URETHRITES AND THEIR COMPLICATIONS SEEMS TO BE EXPEDIENT AS A NON SPECIFIC MEANS. GOOD TOLERABILITY, DEVELOPMENT OF SYSTEMIC REACTION TO INTRAMUSCULAR INJECTION MAKE IT PREFERABLE TO PROTEIN PYROGENS.

UNCLASSIFIED

Acc. Nr: **APC049779** — Abstracting Service:
CHEMICAL ABST. 5-10

Ref. Code:
44 0191

K

101346) Effect of the glass filler on the properties of the filled material. Sagalaev, G. V.; Kukushkin, B. A. (USSR). *Plast. Massy* 1970, (1), 58-8 (Russ). ~~Microfilled fillers, e.g. Aerosil-175 (I), Aerosil-500, and colloidal silica, were added to a glass-fiber reinforced plastic (II) (prepd. from glass roving ZhS-24.60 and modified with phenol-HCHO resin B-2M) to reduce the stress in II. Addn. of 3% I effectively reduced the stress and increased the strength of II. Optimum content of the finely divided fillers always corresponded to an av. thickness of the binder film of ~0.2 μ .~~

CICR 1 me

REEL/FRAME
19801697

USSR

UDC [537.226+537.311.33] .01

VINETSKIY, V. L., ITS KOVSKIY, M. A., and KUKUSHKIN, I. S.

"Interaction of Conduction Electron With Transverse and Longitudinal Optical Vibrations in Ionic Crystals"

Vzaimodeystviye elektronov provedimosti s poperechnymi i prodol'nymi opticheskimi kolebaniyami v ionnykh kristallakh (cf. English above, Physics Institute, Academy of Sciences Ukrainian SSR, No 2), Kiev, 1971, 16 k., rotaprint (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1058)

Translation: The article considers the interaction of conduction electrons with vibrations in ionic crystals which have an isolated type of transverse optical vibrations (e.g., "soft" mode in perovskite ferroelectrics, doubly degenerate mode of transverse optical vibrations in diatomic alkali-halide crystals). At the same time, for purposes of comparison the same method is used to study the interaction with longitudinal optical vibrations, a precision study being made of the crystal lattice (so-called lattice model in which interaction with the internal field created by longitudinal and transverse vibrations can be taken into account, in contrast to the continuum model where only interaction with the macroscopic field of longitudinal vibrations is taken into consideration). On the basis of the model of polarizable ions, the authors consider the

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USSR

VINETSKIY, V. L., et al., Vzaimodeystviye elektrona provodimosti s poberezhnami i prodol'nymi opticheskimi kolebaniyami v ionnykh kristallakh, Kiev, 1971

Hamiltonian of the interaction of the "superfluous" electron with both longitudinal and transverse optical vibrations. From the form of the "transverse" Hamiltonian it follows that there is no interaction with transverse vibrations for crystals with minimum energy at the center of the Brillouin zone. An analysis is made of limiting cases where interaction with optical vibrations can be regarded as perturbation (case of a weak bond) and where it is great (case of a strong bond).

2/2

USSR

VINETSKIY, V. L.; ITSKOVSKIY, M. A.; KUKUSHKIN, L. S. (Institute of Physics, Ukrainian Academy of Sciences, Kiev)

"Interaction of a Conduction Electron with Transverse Optical Oscillations in Ionic Crystals"

Leningrad, Fizika Tverdogo Tela; January, 1971; pp 76-86

ABSTRACT: The Hamiltonian of the interaction of a conduction electron with longitudinal and transverse optical oscillations of a lattice of polarized ions is expressed through static and high-frequency permittivity.

It was shown that for crystals with a minimum of energy in the center of the Brillouin zone interaction with transverse oscillations is absent. For the case of several minima in the zone, the authors calculated the electron mobility with scattering by transverse optical oscillations ($\mu_{\perp}$), comparable with mobility with scattering by longitudinal oscillations $\mu_{\parallel}$ for crystals with ordinary values of ϵ_0 and ϵ_{∞} and playing a basic role, as in ferroelectrics, with large values of the static permittivity of ϵ_0 . Comparison of the theoretical mobility

1/2

USSR

VINETSKIY, V.L., et al, Fizika Tverdogo Tela; January 1971; pp 76-86

$\mu_{\perp}$ with the experimental for barium titanate (BaTiO_3) explains the so-called "positive-temperature drag effect" in the region of phase transition; also obtained was the approximate quantitative agreement of the theoretical mobility with the experimental.

When the interaction with transverse optical oscillations in the zero approximation of the theory is taken into account, the corresponding polaron functional is obtained, an analysis of which shows that in crystals a "transverse" polaron only of small radius is possible; the contribution of transverse oscillations to a "longitudinal" polaron in macroscopic theory is negligible.

Semiconductor Technology

USSR

UDC 621.315.592:609.777.054.2

MERKULOVA, N. A., KUKUSHKIN, N. A., SMIRNOV, V. A., KRAPUKHIN, V. V., and
ALEKSEYEVA, T. P.

"Investigation of the Temperature Field During Zone Recrystallization of Cadmium and Tellurium"

V sb. Toplo- i massoperenos v tverd. telakh, zhidkostyakh i gazakh (Heat and Mass Exchange in Solids, Liquids, and Gases--collection of works), Minsk, 1970, pp 237-244 (from RZh-Metallurgiya, No 8, Aug 70, Abstract No 80456)

Translation: Experimental data on heat exchange at the front of crystallization in the process of zonal refining of Cd and Te is processed according to the criteria of similarity of convective heat exchange, taking into consideration Stefan's condition at the boundary of phase separation. Analysis of the criterial equation shows that the coefficient of heat-exchange decreases with an increase in the relative length of the molten zone. Spontaneous fluctuations of temperature were observed during registration of the temperature along the entire length of the molten zone of the ingot. The largest fluctuations were observed in the middle of the molten zone, where minimum amplitude for Cd was 1.2° at a frequency of 6-8 periods per minute. At the same time no fluctuations were observed in

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USSR

MERKULOVA, N. A., et al, Teplo- i massoperenos v tverd. telakh, zhidkostyakh i gazakh, Minsk, 1970, pp 237-244

narrow zones $2.5 \cdot 10^{-2}$ m. The fluctuations appeared in the narrower zones. On this basis, it is assumed that the source of fluctuations is the turbulent nature of the convective motion. N. DEMENKOV

2/2

USSR

VATEL', I. A., KUKUSHKIN, N. S.

"Optimal Behavior of a Player having the First Move with Inprecise Knowledge of the Interests of the Opponent"

Zh. vychisl. mat. i mat. fiz [Journal of Computer Mathematics and Mathematical Physics], 1973, 13, No 2, pp 303-310 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V454 by the authors)

Translation: A two-man game is studied when the goals of the players are not opposite. A strategy is constructed for player 1 (as a function of the moves of player 2), guaranteeing the maximum result under conditions of incomplete information concerning the interests of player 2. The computational aspects of the problem are analyzed.

1/1

- 52 -

USSR

KUKUSHKIN, N. S.

"One Game with Incomplete Information"

Zh. Vychisl. Mat. i Mat. Fiz. [Journal of Computer Mathematics and Mathematical Physics], 1972, Vol 13, No 1, pp 210-216 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V486, by the author).

Translation: A nonantagonistic game of two persons with fixed sequence of moves is studied, in which the first player has only an upper and lower estimate of the win function of the other player. It is demonstrated that the problem of seeking out the greatest guaranteed result and the optimal strategy for the first player is equivalent to maximization of a function over a sector, the values of the function at each point being solutions of certain extremal problems.

USSR

UDC: 518.90

VATEL', I. A., KUKUSHKIN, N. S., Moscow

"Optimum Behavior of a Player Who Has the Right of the First Move With Inexact Knowledge of His Partner's Interests"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 13, No 2, Mar/Apr 73, pp 303-310

Abstract: The interrelation of levels in a hierarchical system is interpreted as a game with two persons pursuing different but (in general) non-opposed goals. It is assumed that player 1, having information on the interests of player 2 and on his choice, formulates his own strategy as a function of the possible choices of player 2. An optimum strategy is constructed which guarantees player 1 the maximum result, assuming that his information concerning his partner's interests is incomplete. It is shown that computation of the best guaranteed result amounts to finding the maximum of some unimodal function. Recommendations are made on constructing a numerical algorithm for finding the maximum of this function. The authors thank Yu. B. Germeyer for continued interest in the work.

1/1

USSR

UDC 621.374.4

KUKUSHKIN, V. V.

"Frequency Tripling Based on the Effect of Electron Heating by an SHF Field in N-Type Gallium Arsenide"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1995-1996

Abstract: The author calculates the field dependence of maximum efficiency and optimum load impedance for a frequency tripler which utilizes the heating effect of a superhigh-frequency field in N-type gallium arsenide. It was found that effective frequency tripling can be achieved in the multiplier investigated with an efficiency reaching 10-17 percent (8-10 dB) for a semiconductor mobility of $(4-8) \cdot 10^3 \text{ cm}^2/\text{V}\cdot\text{s}$. As the mobility increases, higher efficiencies are achieved for lower amplitudes of the external field. The optimum load impedance of the frequency tripler is 5-6 times the "cold" resistance of the specimen.

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USSR

UDC: 621.373.5

KUKUSHKIN, V. V.

"Effect Which the Mobility of Charge Carriers in N-Type Gallium Arsenide Has on the Amplification and Effectiveness of Frequency Conversion When Electrons Are Heated by an SHF Field"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 211-213

Abstract: Field dependences are calculated for conversion losses and output conductivity of N-type gallium arsenide for various values of carrier mobility. It is assumed that the electric field is uniform, and that the leads and contacts on the specimen have resistances which are negligible in comparison with the impedance of the specimen on the working frequencies. The equivalent circuit of the nonlinear gallium arsenide element is a frequency-independent nonlinear resistor shunted by a fixed capacitor. For a mobility of $3 \cdot 10^3 \text{ cm}^2/\text{v} \cdot \text{sec}$, conversion losses approach 8-9 dB as the field increases. For a carrier mobility in the vicinity of $5 \cdot 10^3 \text{ cm}^2/\text{v} \cdot \text{sec}$, the field dependence of losses has a minimum in the region of 7-8 kV/cm. Conversion without losses is possible when the mobility is greater than about $5.2 \cdot 10^3 \text{ cm}^2/\text{v} \cdot \text{sec}$. Curves for the field dependence of negative input conductance at mobilities of $6 \cdot 10^3$ and $8 \cdot 10^3$

1/2

USSR

KUKUSEKIN, V. V., Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 211-213

$\text{cm}^2/\text{v}\cdot\text{sec}$ show a maximum which reaches a value comparable with the "cold" conductivity of the specimen. The author thanks N. Ye. Skvortsova for constructive criticism during discussion of the results.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SULFONATION REACTIONS. 72. HYDROLYSIS OF BROMOBENZENESULFONIC ACIDS
-U-
AUTHOR--(03)--POTAPOVA, T.I., SPRYSKOV, A.A., KUKUSHKIN, YE.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOIL. 1970, 13(1), 75-8
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SULFONATION, HYDROLYSIS, BROMINATED ORGANIC COMPOUND, BENZENE,
SULFONIC ACID, ISOMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0783 STEP NO--UR/0153/70/013/001/0075/0078
CIRC ACCESSION NO--AP0124452
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124452

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM STUDIES ON THE DEGREE OF SULFONATION OF PHBR BY 50-94PERCENT H SUB2 SO SUB4 IN 10 HR AT 50-200DEGREES, THE MAX. ACID CONCNS. FOR 1PERCENT OR LESS SULFONATION ARE: 89.5PERCENT AT 50DEGREES, 80PERCENT AT 100DEGREES, 73PERCENT AT 150DEGREES, AND 61.5PERCENT AT 200DEGREES. STUDIES OF THE PERCENT HYDROLYSIS IN 10 HR OF O-BROMOBENZENESULFONIC ACID AT 109-47DEGREES IN 76.3-70.4PERCENT H SUB2 SO SUB4, OF P-BROMOBENZENESULFONIC ACID AT 121-65DEGREES IN 74.9-66.6PERCENT H SUB2 SO SUB4, AND OF M-BROMOBENZENESULFONIC ACID AT 160-200DEGREES IN 67.6-57.9PERCENT H SUB2 SO SUB4, INDICATE THAT HYDROLYSIS OF THE ORTHO ISOMER IS INITIATED IN 73.3PERCENT H SUB2 SO SUB4 AT 128.5DEGREES, OF THE PARA ISOMER 144.5DEGREES IN 70.8PERCENT H SUB2 SO SUB4, AND OF THE META ISOMER AT 182DEGREES IN 62PERCENT H SUB2 SO SUB4. FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

USSR

UDC 62:001.57

VASIL'YEV, V. N., DRATSKIY, Yu. M., KOTOV, V. P., and KUKUSHEIN, Yu. A., Engineers

"Modeling an Automated System of Industrial Plant Control"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 8, 1972, pp 34-36

Abstract: This article is devoted to a description of the UMFA, a device for modeling the functions of an automatic factory control system. The purpose of the device is to prepare and acquaint the management personnel of factories with the basic functions and possibilities of automatic plant control with the idea of eventually introducing such control into the plant. It is also meant as a teaching device for junior and senior students of automated production control and to popularize new methods of factory control using economic-mathematical methods and computer techniques. A diagram of the device's external view is given as well as an operational block diagram. Some of its electronic circuits are also reproduced in schematic form. It uses magnetic tape for two-track recording: first, for a dictated text to accompany pictures for demonstration purposes; second, for control signals. Other details of the construction and operation of the device are given.

1/1

- 69 -

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PLATINUM (II) DIMETHYL SULFOXIDE COMPLEXES -U-

AUTHOR--KUKUSHKIN, YU.N., VYAZMENSKIY, YU.E.

COUNTRY OF INFO--USSR *K*

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 480-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLATINUM COMPLEX, SULFUR OXIDE, CHEMICAL SYNTHESIS, PYRIDINE,
AMMONIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0308

STEP NO--UR/0078/70/015/002/0480/0486

CIRC ACCESSION NO--AP0103963

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0103963
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. K(PTLBR SUB3) (L EQUALS ME SUB2 SO) WAS PREPD. BY THE REACTION OF K BROMOPLATINATE WITH ME SUB2 SO OR WITH (PTL SUB2 BR SUB2) OR BY THE REACTION OF (PTL SUB2 BR SUB2) WITH KBR. K(PTLBR SUB3) REACTS WITH EQUIMOLAR CONC. OF AMINE TO GIVE TRANS (PTALBR SUB2), WHERE A EQUALS NH SUB3, PYRIDINE, MENH SUB2, OR ETNH SUB2. CIS (PTALBR SUB2) (A EQUALS PYRIDINE OR NH SUB3) FORMED WHEN L REACTED WITH CORRESPONDING MONOAMINE COMPLEXES. TRANS (PTINH SUB2 MEILBR SUB2) AND TRANS (PTINH SUB2 ETILBR SUB2) ISOMERIZED ON HEATING TO THE CIS STRUCTURES. THE RESULTS IMPLY A HIGH TRANS EFFECT OF COORDINATED ME SUB2 SO.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SYNTHESIS OF PLATINUM (II) TETRAAMINE AND CISDIAMINE -U-

AUTHOR--KUKUSHKIN, YU.N., DKHARA, S.CH.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 586-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLATINUM COMPLEX, CHEMICAL SYNTHESIS, AMMONIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0309

STEP NO--UR/0078/70/015/002/0586/0587

CIRC ACCESSION NO--AP0103964

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70 •

CIRC ACCESSION NO--AP0103964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BRIGHT YELLOW CIS (PT(NH SUB3)
SUB2 NEGATIVE CL SUB2) WAS PREPD. IN 8.6 NH SUB4 OH, NH SUB4 CL BUFFER
SOLN. BY MIXING K SUB2(PTCL SUB4), NH SUB4 CL, AND NH SUB4 OH SOLNS. K
SUB2(PTCL SUB4) REACTS WITH CONCD. NH SUB4 OH SOLNS. K SUB2(PTCL SUB4)
REACTS WITH CONCD. NH SUB4 OH SOLN. AT THE B.P. AND IN THE PRESENCE OF
METALLIC PT TO GIVE (PT(NH SUB3) SUB4)VL SUB2 TIMES H SUB2 O, 80PERCENT
YIELD.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--TYPES OF REACTIONS OF COORDINATED LIGANDS AND FACTORS INFLUENCING
CHANGES IN THEIR REACTIVITY -U-
AUTHOR--KUKUSHKIN, YU.N.

COUNTRY OF INFO--USSR

SOURCE--USP. KHIM. 1970, 39(3), 361-79

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, TAUTOMERISM, METAL ION, LIGAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1841

STEP NO--UR/0074/70/039/003/0361/0379

CIRC ACCESSION NO--AP0123630

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123630

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 93 REFS. COVERING CHANGES IN THE PROPERTIES OF LIGANDS UNDER THE INFLUENCE OF THE CENTRAL METAL ATOM IN THE COMPLEXES. EFFECTS OF THE COMPLEX ION CHARGE ON REACTIVITY OF THE COORDINATED LIGAND, STABILIZATION OF TAUTOMERS OF LIGANDS BY COMPLEX FORMATION, DEVELOPMENT OF NEW CHEM. PROPERTIES IN A LIGAND FOLLOWING ITS ENTRY INTO A COMPLEX, METAL IONS AS MATRICES FOR SYNTHESIS OF ORG. MOLS., AND INSERTION REACTIONS INTO METAL LIGAND BONDS. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CALCULATION OF THE ULTRAVIOLET AND VISIBLE ABSORPTION SPECTRA OF A
NICKEL,II 1,5,DIPHENYLFORMAZAN COMPLEX -U-
AUTHOR--(05)-YURCHENKO, E.N., KUKUSHKINA, I.I., YERMAKOVA, M.I., AVDEYEV,
V.I., LATOSH, N.I.
COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 47-54

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, ABSORPTION SPECTRUM, NICKEL COMPLEX, CALCULATION,
MOLECULAR ORBITAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1720

STEP NO--UR/0379/10/006/001/0047/0054

CIRC ACCESSION NO--AP0129038

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129088

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FREQUENCIES OF THE MAX. AND THE OSCILLATOR STRENGTHS ARE GIVEN OF BANDS OF THE ABSORPTION SPECTRA OF 1,5-DIPHENYLFORMAZAN I, AND ITS $Ni(II)$ COMPLEX (II), RESOLVED INTO INDIVIDUAL GAUSSIAN COMPONENTS, IN THE SOLNS. OF CCL SUB4, ME SUB2 CO, AND ETOH. IN VIEW OF THE INTERPRETATION OF THE BANDS, THE CALC. OF THE MOLS. I AND II, BY USING THE MO LCAO METHOD OF MULLIKEN HELMHOLTZ WOLFSBERG, WAS PERFORMED. THE SINGLE ELECTRON SCHEMES OF THE ENERGY LEVELS OF I, AND II, AND THE ASSIGNMENTS OF THE TRANSITIONS ARE GIVEN. THE INTENSITY OF THE LONGWAVE ABSORPTION OF I RISES IN GOING FROM CCL SUB4 TO ETOH, WHEREAS THE INTENSITY OF THE TRANSITIONS AT SHORTER WAVELENGTHS DID NOT CHANGE. THE OSCILLATOR STRENGTHS OF THE 1ST TRANSITION AND OF THE TRANSITIONS AT SHORTER WAVELENGTHS DECREASED IN THE SPECTRUM OF II WITH THE INCREASING INTERACTION OF THE SOLVENTS IN THE ABOVE SEQUENCE. THIS INTERACTION CAUSES THE DECREASE OF THE NEG. CHARGE OF THE N ATOMS AND THE DECREASE OF THE OSCILLATOR STRENGTHS OF THE TRANSITIONS BETWEEN THE MO WHICH INCLUDED THE AO OF N. THE BAND OF II WHICH LIES IN THE IR REGION AT 4500 CM PRIME NEGATIVE1 WAS ASSIGNED, ON THE BASIS OF THE CALCNS., TO THE ELECTRONIC TRANSITION $\pi A \rightarrow \pi^* A$ SUBO-6A SUBU. ALL TRANSITIONS WERE INTERPRETED AS $\pi \rightarrow \pi^*$ SEXTILE TRANSITIONS.

FACILITY: IZHEVSK. MEKH. INST., IZHEVSK, USSR.

UNCLASSIFIED

USSR

UDC 669.15'24-194:539.2191.3

ZEMSKIY, S. V., GRIGORKIN, V. I., ZAKHARENKOVA, V. I., and KIRILUSHKINA, V. N.,
Central Scientific Research Institute of Ferrous Metallurgy (Imeni I. P.
Bardin, Lipets Branch of the Moscow Institute of Steel and Alloys

"Diffusion of Carbon in Ferro-Nickel Steels of Different Composition"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 10,
1972, pp 115-118

Abstract: The diffusion of carbon was investigated on welded pairs of ferro-nickel steel with a Ni content corresponding to extreme concentrations possible in inverse martensitic transformation of low-carbon (0.06% C) steels with 10% Ni and medium-carbon (0.38% C) steels with 18% Ni. The diffusion pairs were prepared from cubic steel specimens into which the radioactive isotope C^{14} was introduced. A method was developed of determining the diffusion coefficients of inclusion admixtures in the three-component system with distinct diffusion coefficients in each half of the welded specimen. The coefficients of carbon diffusion were specified in alloys with 0.38% C and 9, 18, and 27% Ni and in alloys with 0.006% C and 5, 10, and 15% Ni. The temperature dependences of the diffusion coefficient of carbon in Fe-Ni alloys in γ -solid solution were determined. Four figures, ten formulas, five bibliographic references.

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USSR

UDC: 53.082

KUKUY, A. S., IGLITSYN, M. I.

"An Instrument for Measuring the Resistivity of Irregularly Shaped Single Crystal Rods With Geometric Factors Taken Into Account Automatically"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 599-600

Abstract: The paper describes an instrument for measuring resistivity of single crystal rods in which the correction for the geometry of the specimen is automatically introduced by functional converters. A block diagram of the device is given and its operation is explained. Measurements of the resistivity of single crystals grown by the Stepanov method showed an error of 5% with repeatability of about 0.6% as shown by the coefficient of variation of repeated measurements.

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USSR

UDC: 53.082

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., LEVINSON, D. I.

"A Device for Measuring the Resistivity of Single Crystal Rods by a Noncontact Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 601-602

Abstract: A device is proposed which uses a noncontact capacitance method for checking the volumetric distribution of resistivity in cylindrical germanium specimens. The measure of resistivity is the amplitude of the voltage taken off from a measurement loop into which the study specimen is introduced through capacitive electrodes. In the proposed device, the measurement results are made more reliable by providing for automatic tuning of the measurement loop to resonance with the supply generator by adding a correcting variable capacitor with the rotor mechanically connected to one of the coupling electrodes. A comparison of measurement results with data obtained by the two-probe method shows a deviation of no more than $\pm 10\%$. The repeatability of the device as evaluated by the coefficient of variation of repeated measurements at a single point was less than 1%.

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USSR

UDC 53.032

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., LEVINSON, D. I.

"Device for Measuring the Specific Resistance of Shaped Single Crystals by a Contactless Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972, pp 601-602

Abstract: The application of contactless methods to control the specific resistance of shaped single crystals of different geometries is discussed. It is noted that the application of the contactless capacitance method to control the distribution of the specific resistance over cylindrical single crystals of small diameter not only raises the speed of measurement but makes it possible to avoid losses of costly materials associated with the surface treatment of crystals in probe measurements. The essence of the method is that the voltage amplitude taken from a measuring circuit, into which the sample is introduced through capacitance connecting electrodes, serves as a measure of the specific resistance. A necessary condition for obtaining reliable results has been tuning the measuring circuit to resonance with the generator supplying this circuit, this is ultimately achieved by changing the capacitance of the connection between the electrodes and the sample being studied. This article
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USSR

KUSHCH, V. V., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972, pp 601-602

describes a device which makes it possible to avoid the operation of manual tuning of the capacitance of the connection by introducing a variable correcting capacitor into the circuit, the rotor of which is mechanically connected with one of the connecting electrodes. A diagram and description of the device are given. The measuring properties of the device were evaluated on industrial cylindrical germanium single crystals of diameter 8-9 mm, and the measurements obtained by the contactless method coincide with an accuracy of $\pm 10\%$ with measurements obtained by the two-probe method.

2/2

- 53 -

USSR

UDC: 537.31

KON'KOV, V. L., KUKUY, A. S., POLYAKOV, N. N., Gor'kiy Physicotechnical Research Institute

"Measuring Conductivity and the Hall Coefficient of Semiconductor Single Crystals by the Four-Probe Method"

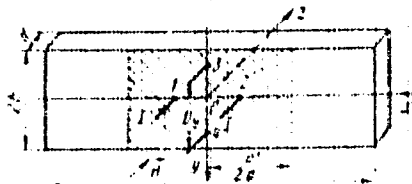
Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 603-606

Abstract: The paper discusses a method of direct measurement of the Hall coefficient and conductivity of semiconductors in the form of long single crystal strips. The geometry of the measurement set-up is shown in the figure. Current I is sent through probes 1 and 2, and EMF U_H (Hall voltage) is taken off from probes 3 and 4. The constant magnetic field H is directed orthogonally to the plane of the specimen. Measurements are made in the steady state on direct current. A formula is derived for determining the Hall EMF in terms of the applied current and the dimensions of the specimen. The theoretical results were confirmed experimentally by measurements on germanium and silicon single crystals.

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USSR

KON'KOV, V. L. et al., IAN SSSR: Ser. Fiz., V 36, 1972, pp 603-606



2/2

- 221 -

USSR

UDC: 537.31

POLYAKOV, N. N., KUKUY, A. S., GOLUBEV, V. I., PAYLOV, N. I., Gor'kiy
Physicotechnical Research Institute

"Checking the Homogeneity of Semiconductor Single Crystals From Measurements of Their Resistivity"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 607-613

Abstract: Correction factors are calculated to account for the dimensions of the specimen and probe position in resistivity measurements by the four-probe method on rectangular and cylindrical single crystal semiconductors. The results of computer calculations are presented in tables and curves. It was found that reducing the thickness of a specimen past half the distance between probes does not affect the measurement results. It was also found that the specimen can be considered infinitely thick beyond a thickness of five times the distance between probes.

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USSR

BATUYEV, A. S., and KUKUYEV, L. A., Department of Physiology of Higher Nervous Activity, Leningrad State University, and Brain Institute, Academy of Medical Sciences USSR

"The Motor Analysor and Its Place Among the Other Analysors"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 20, No 6, 1970, pp 1,115--1,122

Abstract: It is evident from the research of recent years, here reviewed, that the brain structures connected with the motor analysor are exceptionally complex, both because of the variety of afferent and efferent pathways involved in voluntary movements, and because of the activity of the entire cerebral cortex, i.e., the entire set of analysors. Another important factor is the overlapping of the cortical nuclei of the motor analysor with those of the cutaneous, visual, and acoustic analysors. The resulting "intermediate zones" contain projections of the activity of each individual analysor as well as of the combined activity of several analysors which are responsible for the functioning of the "specifically human" cortical formations. Thus, the motor analysor occupies a special place among the nerves

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USSR

BATUYEV, A. S., and KUKUYEV, L. A., Zhurnal Vysshey Nерvnoy Deyatel'nosti, Vol 20, No 6, 1970, pp 1.115-1,122

receptors in that it integrates not only proprioceptive impulses but also information from the other receptors, thereby enabling them to function with maximum efficiency.

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Luminescence

USSR

UDC 541.138.2:546

GARDIN, YU. YE., KULABUKHOV, V. M., ODYNETS, L. L., PERSHINA, G. A., Petrozavodsk State University imeni O. V. Kuusinen

"Mechanism of Galvanoluminescence During Anodic Polarization of Aluminum Oxide"

Moscow, Elektrokimiya, Vol VII, No 8, 1971, pp 1184-1185

Abstract: A study was made of the spectral composition of the galvanoluminescence during anodic polarization of systems made up of aluminum, aluminum oxide and an electrolyte. The oxide layer was obtained by anodic oxidation of aluminum (99.99% pure) in two different electrolytes: a) an aqueous solution of boric acid (30 g/liter) with borax (0.05 g/liter) and b) an aqueous solution of oxalic acid (30 g/liter). The galvanoluminescence spectra are plotted for the two given cases. In two series of experiments the structure of the oxide layers remained invariant; however, the galvanoluminescence spectra corresponded to the electrolyte in which the measurement was taken. The results obtained agree with the previously stated proposition [S. P. Maminova, Elektrokimiya, No 1, 365, 1965] that in systems made up of a metal (semiconductor) oxide and electrolyte galvanoluminescence

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USSR

GARDIN, YU. YE., et al, Elektrokimiya, Vol VII, No 8, 1971, pp 1184-1185

constitutes electrochemical luminescence and is connected with electrochemical reactions at the oxide/electrolyte interface.

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USSR

UDC 612.015.348:547.965].014.426.014.45

VIBE, K. G., MIROYEDOVA, E. P., KULACHENKO, S. P., and PAYTEL'BERG-BLANK, V. R.,
Chair of Animal Physiology, Tselinograd Agricultural Institute, and Chair of
Pathophysiology, Tselinograd Medical Institute

"Changes in the Amino Acid Content in Internal Organs of Rabbits Exposed to
High-Frequency Electromagnetic and Ultrasound Oscillations"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp
47-48

Abstract: Experiments on rabbits showed that high-frequency electromagnetic fields and ultrasound, like other physical agents, change physiological processes according to dose rate and duration of exposure. For example exposure to a SHF field (centimeter waves) of 30 or 50 w for 10 min did not significantly alter the free amino acid content of the liver, stomach, small intestine, lungs, spleen, and kidneys. After exposure to SHF field (centimeter waves) of 75 w for the same length of time, however, the amino acid content of the stomach increased, while that of the intestine, spleen, and kidneys decreased. Ultrasound at 3 w/cm² for 5 min produced the greatest changes in the organs studied. A weaker dose (0.3 w/cm²) had much less effect, even when continued for a much longer period of time.

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- 33 -

USSR

KULACHENKO, V. P., and MOLODTSOV, V. K.

"The Action of Electromagnetic Fields on the Vascular System and the Metabolism of Microelements in Animals"

Tr. Tschinogr. S. Kh. in-t. (Proceedings of the Tschinograd Agricultural Institute), 1973, Vol 9, No 5, pp 89-94 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 24F 1435)

Translation: The effect of electromagnetic fields was studied on the vascular system and some general properties of blood. Data were also obtained on the effect of ultra-high frequency irradiation on the content of microelements in the liver. The effect of the ultra high frequency waves on the exchange of microelements in the liver is intensified with the concurrent action of ephedrine on the sympathetic nervous system.

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Acc. Nr.

AP0041857

Abstracting Service:

CHEMICAL ABST.

Ref. Code

4R 0366

89923k Configuration inversion of meso-dibenzylaminosuccinic acid. Mikhno, S. D.; Kulachina, N. S.; Beregovskii, V. M. (Vses. Nauch. Issled. Vitamin. Inst., Moscow, USSR). Zh. Org. Khim. 1970, 6(1), 81-4 (Russ). The reaction of ClCO_2Et with mesodibenzylaminosuccinic acid (I) in the presence of Na_2CO_3 at -5° gave 5.5:1 mixt. of DL-N-carbethoxydibenzylaminosuccinic acid (II) and bis-N-carbethoxybenzylaminosuccinic acid (III). The reaction of SOCl_2 with II gave II anhydride (IV) which was converted by heating at 200° into *trans*-4,5-dicarboxy-N,N'-dibenzyl-2-imidazolidinone anhydride (V). Heating II or III at 200° also gave V. The hydrolysis of IV gave II. Thus, the inversion of configuration occurs during the reaction of I with ClCO_2Et . The resolution of II with L-(+)-threo-1-(p-nitrophenyl)-2-amino-1,3-propanediol sulfate gave (+)-threo-II analog acid (--) and (-)-threo-II analog. The configuration of V was shown by comparison with the known *cis*-V isomer (U.S. 2,489,232, 1951). Heating V gave *trans*-4,5-dicarboxy-N,N'-dibenzyl-2-imidazolidinone monobenzamide.

CPJR

REEL/FRAME

19751738

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EXPERIMENTAL STUDIES OF TOXIC EFFECTS OF THE SERUM FROM PATIENTS
WITH HEMORRHAGIC VASCULITES OF THE SKIN -U-
AUTHOR--(02)-KULAGA, V.V., POLUSHKIN, B.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 20-24.

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGE, ALLERGIC DISEASE, SKIN DISEASE, GUINEA PIG,
SEROTONIN, HEPARIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1490

STEP NO--UR/0206/70/000/003/0020/0024

CIRC ACCESSION NO--AP0101574

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED HEMORRHAGIC PROPERTIES OF THE SERUM FROM 52 PATIENTS SUFFERING FROM DIFFERENT FORMS OF VASCULITES OF THE SKIN (ALLERGIC VASCULITES OF THE ACUTE COURSE IN 30, DERMATIC FORM OF NODULAR PERIARTHERITIS AND CHRONIC ERYTHEMA NODOSUM IN 10, CHRONIC CAPILLARITES IN 12 PATIENTS). THE METHOD OF BERNARD ET AL. CONSISTED IN THE INOCULATION OF TWO GUINEA PIGS IN THE RIGHT SIDE INTRACUTANEOUSLY WITH 0.2 ML OF A SERUM SPECIMEN FROM A PATIENT. THE CONTROL SERUM WAS INOCULATED INTO THE SYMMETRICAL AREA. SERA FROM PATIENTS WITH ALLERGIC VASCULITES OF THE SKIN IN THE ACUTE FORM PRODUCED IN 81PERCENT OF CASES AN INFLAMMATORY HEMORRHAGIC REACTION ENDING WITH NECROSIS IN THE SKIN OF THE ANIMALS. LESS FREQUENT (50PERCENT) AND LESS INTENSIVE REACTIONS WERE OBTAINED WITH SERA FROM PATIENTS WITH CHRONIC CAPILLARITES. SERA FROM HEALTHY SUBJECTS AND PATIENTS WITH GONORRHEA PRODUCED A POORLY POSITIVE REACTION IN 20PERCENT. THE HEMORRHAGIC INACTOR OF THE SERUM IS THERMOLABILE AND IS INACTIVATED AT 56PERCENT C FOR ONE HOUR. ITS EFFECT IS NOT INHIBITED BY CYPROHEPTADINE AND SEROTONINE. HEPARIN AND BRADIKININ ENHANCE THE PHENOMENON SIGNIFICANTLY.

UNCLASSIFIED

USSR

UDC 615.849.1.015.25.015.4

KULAGIN, A. N., KOZLOV, V. A., and GORSHKOV, V. I., Scientific Research Laboratory of Experimental Immunobiology, Academy of Medical Sciences USSR, Moscow

"Changes in the Radiosensitivity of CAVE Line Cells Following Multiple Action of beta-Mercaptopropylamine"

Moscow, Byulleten' Eksperimental' noy Biologii i Meditsiny, Vol 72, No 9, Sep 71, pp 53-56

Abstract: A variant of cells resistant to high concentrations of radioprotectors was obtained and their radiation resistance studied. CAVE line cells (obtained in 1961 from the epithelium of stomach cancer in woman) were used because of least adhesiveness and slower fragmentation after destruction. The radioprotector selected was beta-mercaptopropylamine (MPA) the most effective of the aminothiols compounds used in the prophylaxis of radiation damage. The cells were subjected to constant contact with the MPA preparation, multiplied, and were again processed with the preparation, a total of ten times. After multiple processing the cells differed from the original line and were designated as CAVE_{k-10_v}. Compared to the CAVE line, they con-

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USSR

KULAGIN, A. N., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, N1 9, Sep 71, pp 53-56

tained a greater number of cells resistant to high concentrations of MPA and lesser sensitivity to ionizing radiation. These indexes were maintained during two years of cultivation of the cells under routine conditions. This suggests a possible use of pharmacochemical protection for increasing the resistance of body tissues to the effect of radiation.

2/2

- 31 -

USSR

~~KULAGIN~~ A. S. and SHIK, M. L., Institute of Problems of Information Transmission, Academy of Sciences USSR

"Interaction of Symmetrical Extremities During Controlled Locomotion"

Moscow, Biofizika, No 1, 1970, pp 164-170

Abstract: Controlled locomotion of mesencephalic cats on a treadmill with two belts whose speed could be changed independently was studied. With 2- and 3-fold differences in the speed of the belts, the symmetrical extremities of the animals moved in the same rhythm (with equal duration of the cycles). The structure of the stepping cycle of the extremities remained the same as at the corresponding speeds on the "coupled" belts. With greater differences in speed, the interaction of the extremities changed and the animals took steps with the duration of the cycles in a 1:2 ratio. Thus, the symmetrical extremities interacted with both small and large differences in the speed of the treadmill belts. The nature of the interaction varied with the conditions under which the locomotion took place. The experiments show that a parameter of stepping movements such as the structure of the cycle depends only on its own afferent impulses and intensity of stimulation of the "locomotor region." On the other hand, parameters such as the duration and amplitude of the cycle depend not only on their own afferent impulses but on the afferent impulses from the symmetrical extremity.

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- 120 -

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTERACTION OF SYMMETRICAL EXTREMITIES DURING CONTROLLED LOCOMOTION
-U-

AUTHOR--(02)-KULAGIN, A.S., SHIK, M.L.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, BIOFIZIKA, NO 1, 1970, PP 164-170

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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PROCESSING DATE--300C170

CIRC ACCESSION NO--AP0121455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONTROLLED LOCOMOTION OF MESENCEPHALIC CATS ON A TREADMILL WITH TWO BELTS WHOSE SPEED COULD BE CHANGED INDEPENDENTLY WAS STUDIED. WITH 2 AND 3 FOLD DIFFERENCES IN THE SPEED OF THE BELTS, THE SYMMETRICAL EXTREMITIES OF THE ANIMALS MOVED IN THE SAME RHYTHM (WITH EQUAL DURATION OF THE CYCLES). THE STRUCTURE OF THE STEPPING CYCLE OF THE EXTREMITIES REMAINED THE SAME AS AT THE CORRESPONDING SPEEDS ON THE "COUPLED" BELTS. WITH GREATER DIFFERENCES IN SPEED, THE INTERACTION OF THE EXTREMITIES CHANGED AND THE ANIMALS TOOK STEPS WITH THE DURATION OF THE CYCLES IN A 1:1 RATIO. THUS, THE SYMMETRICAL EXTREMITIES INTERACTED WITH BOTH SMALL AND LARGE DIFFERENCES IN THE SPEED OF THE TREADMILL BELTS. THE NATURE OF THE INTERACTION VARIED WITH THE CONDITIONS UNDER WHICH THE LOCOMOTION TOOK PLACE. THE EXPERIMENTS SHOW THAT A PARAMETER OF STEPPING MOVEMENTS SUCH AS THE STRUCTURE OF THE CYCLE DEPENDS ONLY ON ITS OWN AFFERENT IMPULSES AND INTENSITY OF STIMULATION OF THE "LOCOMOTOR REGION". ON THE OTHER HAND, PARAMETERS SUCH AS THE DURATION AND AMPLITUDE OF THE CYCLE DEPEND NOT ONLY ON THEIR OWN AFFERENT IMPULSES BUT ON THE AFFERENT IMPULSES FROM THE SYMMETRICAL EXTREMITY. FACILITY: INSTITUTE OF PROBLEMS OF INFORMATION TRANSMISSION, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

KULAGIN, I. D.

5865 6133, 26 6.2.74

ANNEALING OF PLASMA METAL SPRAYING, FACING, CUTTING, AND SPRAYING

Article by N. N. Ryabin, I. D. Kulagin, M. Kh. Shorshorov, V. V. Kudinov, V. V. Krasulin, V. A. Petukhov, V. A. Vily, Moscow, Vostochnyye Prosvetly, 1974, 11, 1-11, 11 refs.

Introduction

The development of the technique of generating low-temperature plasmas placed in the hands of technologists an extremely flexible tool, quickly found application for cutting, coating, melting, welding, spraying, etc. of low-temperature plasmas for research and industrial purposes continues to expand areas.

The primary problems that are solved during plasma processes are those that involve interaction of plasmas with a solid. These include local heating, melting of the base and applied metal, directional removal of molten metal from a cut, or welding, spraying and acceleration of particles by the plasma during the application of coatings. The specific power which modern technological plasmas are capable of developing on a solid surface is 10^3-10^4 W/cm² during plasma arc processing and 10^2-10^3 W/cm² during plasma jet processing. The specific power of the plasmas jet may be decreased virtually without bound, depending on the requirements of the process, and can be spread over a large area, insuring "soft", uniform heating of a surface. This property of the plasmas jet is used for melting and metal spray coating.

Heat plasma treatment processes, even with the highest concentration of energy, may be described on the basis of the theory of concentrated heat sources, developed by N. N. Ryabin [1].

Certain aspects of thermal physics of the most commonly used plasma processes and ways of controlling them are discussed in the article.

USSR

WDC 621.382:535.576

GOPSHTEYN-GARDT, A.L., KOVYREVA, N.I., KOGAN, L.M., KULAGIN, L.N., KURLYAND, B.I.,
TIN'KOV, A.P., TRUSHINA, V.YE.

"Semiconductor Light Source (Light-Emitting Diode) Of Gallium Phosphide"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their
Application--Collection Of Works), Issue 4, Moscow, "Sov. radio," 1972, pp 3-14
(from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 98510)

Translation: The results are discussed of the development and an investigation
of the electrical and optical characteristics of gallium phosphide red-radiation
light-emitting diodes. The method of creation of p-n structures and the design
of the light-emitting diode are described. The principal areas of application of
the light-emitting diodes are considered. The devices described are characteriz-
ed by a quantum efficiency of radiation of 0.1--1 percent. 11 ill. 1 tab. 19 ref.
Author's abstract.

1/1

- 112 -

USSR

UDC 615.917

KULAGIN, O. H.

"Effect of Some Lipotropic Substances on the Result of Intoxication and the Functional State of the Liver of Animals on Poisoning With Organochlorine Pesticides"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning — collection of works), vyp. 9, Kiev, 1971, pp 137-141 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.794)

Translation: Rats were injected intraperitoneally with lipotropic substances — choline (I) in the form of a 10% aqueous solution 300 mg/kg each and lipocaine (II) with metidone (III) in the form of 3% and 2.5% solutions (50 mg and 100 mg/kg respectively) daily for 10 days after triple poisoning with technical heptachlor (IV) and gamma-hexachlorocyclohexane (V ; lindane) every other day intraperitoneally in total doses equal to DL₅₀. Compound I increases the survival rate of the rats to 80%; II and III, to 90% for poisoning with IV and to 80% for poisoning with V (50% in the control group). Compound II + III had a noticeable normalizing effect on the carbohydrate function of the liver in rats poisoned with IV and V: I had no effect on the glycogen content in the liver when poisoning with IV and V, but the sugar, lactic acid and pyruvic acid levels in the

172

USSR

KULAGIN, O. M., Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl.,
vyp. 9, Kiev, 1971, pp 137-141

blood on the 10th day of treatment with I changed toward the normalization side. The II + III also had the most expressed normalizing effect on the protein-forming function of the liver. Against a background of general improvement of the protein composition, there was almost complete normalization of the ratio of the lipoproteins and thymol test. The II + III also had a noticeable normalizing effect on the lipid and cholesterol content in the liver when poisoning with IV.

2/2

- 52 -

UNCLASSIFIED

PROCESSING DATE—300CT70

020

TITLE—EFFECT OF SEVIN ON LIVER FUNCTION AND STRUCTURE —U—

AUTHOR—(05)—KAGAN, YU.S., RODIONOV, G.A., VORONINA, L.YA., VELICHKO, L.S.,
KULAGIN, O.M.

COUNTRY OF INFO—USSR

SOURCE—FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 219-24

DATE PUBLISHED—70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—PESTICIDE, LIVER, RABBIT, CHOLINESTERASE, ENZYME ACTIVITY

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
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STEP NO—UR/0390/70/033/002/0219/0224

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PROCESSING DATE--800070

-2/2 020

CIRC ACCESSION NO--AP0123933

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. PROLONGED ADMINISTRATION OF SEVIN TO RABBITS AND RATS CHANGED LIVER FUNCTION AND REDUCED THE CHOLINESTERASE ACTIVITY IN THE BLOOD AND INTERNAL ORGANS. SEVIN INTRODUCED THROUGH A STOMACH PROBE AT 38 MG-KG DAILY FOR 1 MONTH INCREASED SERUM ALANINE AMINOTRANSFERASE AND ALK. PHOSPHATASE ACTIVITIES AND INCREASED THE RATIO OF LIVER WT. TO BRAIN WT. AT 7.0 MG-KG (ADDED TO THE FOOD) DAILY FOR 3 DAYS SEVIN INCREASED THE DURATION OF HEXOBARBITAL SLEEP AND SOMEWHAT INCREASED THE WT. RATIO OF LIVER TO BRAIN. SEVIN ADMINISTERED TO RABBITS AT 0.75 MG-KG AND TO RATS AT 1.00 MG-KG DAILY INHIBITED LIVER FUNCTION. REDUCED CHOLINESTERASE ACTIVITY AND CHANGES IN SERUM PROTEIN FRACTIONS WERE OBSD. WITH ALL DOSES. THE PESTICIDE INDUCED NECROTIC CHANGES IN THE LIVER. HISTOCHEN. STUDIES SHOWED SHIFTS IN THE CONTENT AND DISTRIBUTION OF GLYCOGEN, IN LIVER SUCCINATE DEHYDROGENASE, AND IN CHOLINESTERASE OF THE BRAIN, SPINAL COLUMN, AND MOTOR NERVE ENDINGS OF THE STRIATED MUSCLES. SEVIN DID NOT ACCUMULATE IN THE BODIES OF RATS AND RABBITS. FACILITY: VSES. NAUCH. ISSLED. INST. GIG. TOKSIKOL. PESTITS., POLIM. PLAST. MASS. KIEV, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--1 SEP70
TITLE--MODIFICATION OF APPARATUS FOR LARGE SCALE STUDIES OF BLOOD SERUM
PROTEINS BY MEANS OF AGAR ELECTROPHORESIS -U-
AUTHOR--KULAGIN, O.M.
COUNTRY OF INFO--USSR *K*
SOURCE--VOPROSY MEDITSINSKOY KHMII, 1970, VOL 16, NR 2, PP 211-215
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SERUM PROTEIN, AGAR, ELECTROPHORESIS, GEL, MEDICAL LABORATORY
INSTRUMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0646 STEP NO--UR/0301/70/016/002/0211/0215
CIRC ACCESSION NO--AP0102632
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UNCLASSIFIED

PROCESSING DATE--13SEP70

CIRC ACCESSION NO--AP0102632

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIMPLIFIED DISASSEMBLED CELL FOR ELECTROPHORESIS IN AGAR GEL WAS PROPOSED. THE CONSTRUCTION OF THE APPARATUS AND CONDITIONS FOR THE RUN OF ELECTROPHORESIS ARE DESCRIBED. THE APPARATUS DEVELOPED PERMITS TO RUN FROM 10 TO MORE THAN 100 EXPERIMENTS SIMULTANEOUSLY AT A STANDARD CONDITIONS AND REGIME.

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